

REMARKS

Prior to the present response, claims 1-20 were pending. Claims 1-20 have been amended and new claims 21-30 have been added. Accordingly, claims 1-30 currently are pending.

In reviewing independent claims 1 and 11, Applicant noted a minor inconsistency in the language used to recite the feature character recognition certainty. More specifically, the term "certainty" is recited in the singular in claims 1 and 11. While the specification describes that character recognition certainly is achieved for each character image, use of "certainty" in the singular in independent claims 1 and 11 appears to recite that only one character recognition exists for a plurality of character images, thus causing the claims to appear inconsistent with the description in the specification. Additionally, "certainty," as recited in independent claims 1 and 11, does not correspond to recitations concerning this feature as set forth in the dependent claims. While it is respectfully submitted that the meaning and scope of pending claims 1 and 11 would have been apparent to one of ordinary skill in the art from a reading of claims 1 and 11 as originally filed, especially when reading these claims in light of the specification, claims 1 and 11 have been changed to make their correspondence between the specification description and the claims abundantly clear and to improve readability. It is respectfully asserted that these changes were not made in response to any applied statute concerning patentability.

Amendments to dependent claims 2-10 and 12-20 were made solely to correct minor grammatical informalities.

Applicants note with appreciation the Examiner's indication of allowable subject matter in claims 2-9. However, Applicants respectfully submit that all pending claims 1-30 are allowable. It is requested, therefore, that the rewriting of dependent claims 2-9 into independent form be held in abeyance in light of the remarks that follow.

It is noted that the Office Action does not include acknowledgment of Applicants' claim for priority under 35 U.S.C. § 119, based on Japanese Patent Application No. 2000-185267, which was filed in Japan on June 20, 2000. The Examiner is respectfully requested to acknowledge Applicants' priority claim and to indicate whether the certified copy of this document has been received.

In the Office Action, the drawings are objected to because Figures 1, 2A and 2B are not designated by a legend such as "Prior Art." It is respectfully submitted, however, that each of Figures 1, 2A and 2B are labeled "RELATED ART." These related art figures illustrate various problems that are often encountered in character recognition, which the present invention addresses. The present designations "RELATED ART" are believed to adequately distinguish the invention as shown in Figures 3-13 from the character recognition problems illustrated in Figures 1, 2A and 2B. It is therefore believed that correction of these figures would not be required by MPEP § 608.02(g), and also 37 C.F.R. §§ 1.81 and 1.84. As such, it is requested that the objection be withdrawn.

On page 2 of the Office Action, claims 11-20 were rejected under 35 U.S.C. § 101 for allegedly being directed to non-statutory subject matter. More particularly, the Action objects to the use of the term "a program product" without using a positive recitation of a "computer readable medium." In response, Applicants have amended claim 11 in accordance with the language suggested by the Examiner. Hence, it is respectfully submitted that the amendment to claim 11 renders moot the rejection of claims 11-20 under Section 101. Accordingly, the rejection should be withdrawn.

The Office Action includes a rejection of claims 1, 10, 11 and 20 under 35 U.S.C. § 102(e) as allegedly being anticipated by Naoi et al. (U.S. Patent No. 6,721,463). This rejection is respectfully traversed, as the Naoi et al. patent fails to disclose each and every claimed feature respectively recited in independent claims 1 and 11.

For instance, the Naoi et al. patent does not disclose the claimed "judgment unit that judges whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be prohibited from being converted into character code data depending on at least one of the character recognition certainties of said character images contained in the character image group," as recited independent claim 1, or similar features recited in connection with a step of judging set forth in independent claim 11. These distinguishing features are analyzed below in greater detail.

Applicant's specification describes exemplary examples of an image processing device and method. For example, as shown in Applicant's Figure 4 and

disclosed in the related description in the specification, an image processing device 13 includes a character recognition unit 31, which recognizes character codes from each character image to obtain character code data, and detects character recognition certainties, which are, respectively, degrees of certainty of character code recognition. The character recognition unit 31 also operates to recognize position information of a character image and attributes, such as font type, size and style.

The image processing device 13 also includes a conversion unit that converts the character images to character code data according to the character codes. The character images to be converted are determined based a judgment made by a judgment unit 33, examples of which are described in paragraphs [0050]-[0061] and [0068]-[0078] of the specification. As disclosed therein, a judgment unit judges whether all the character images in a specific character image group, which may comprise a single word, a group of words (e.g., a title), a line, paragraph or other character image block. In some examples, one or more prescribed values may be set up to for comparison with the recognition certainties of the character images. (See, for example, Figures 7 and 11.) Such prescribed values may include one or more thresholds arbitrarily set such that as little as one detected character image certainty can prohibit an assembly of multiple adjoining character images from being converted into character code. (See, for example, paragraph [0053] and steps S42 and S44-S47 of Figure 11.) The specification describes a number of other exemplary ways in which prohibition of conversion of character images to character code may be carried out, such as averaging values of the character recognition certainties on a character image group, computing ratios including values of certainties, etc.

The foregoing features are broadly encompassed by each of the independent claims. For example, independent claim 1 is directed to an image processing device that includes a character recognition unit that recognizes character codes from character images in image data and also detects character recognition certainties, which are respectively degrees of correctly recognizing the character codes, a conversion unit that converts the character images to character code data according to the character codes, and a judgment unit that judges whether the character

images should be converted to the character code data. Claim 1 recites that the judgment unit judges whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be prohibited from being converted into character code data depending on at least one of the character recognition certainties of said character images contained in the character image group.

In setting forth the rejection of claim 1, the Office refers to column 21, lines 48-52, and Figure 26 of the Naoi et al. patent and asserts that Naoi et al. discloses a judgment unit that prohibits the characters in a character string from being converted to a character code. It is respectfully submitted, however, that the relied upon part of Naoi et al. does not disclose "a judgment unit that judges ... whether all character images contained in a specific character image group ... should be prohibited from being converted into character code data depending on at least one of the character recognition certainties ...," as recited in claim 1. To the contrary, Naoi et al. discloses generation of character codes without exception, as indicated in steps S106 and S107 of Figure 26, and the following description from column 21, lines 48-55:

If the reliability of character recognition is lower than a predetermined threshold, then the user is notified that an image is stored, and the image of the character string as well as its character code is stored as management information (S106) ... If the reliability is equal to or higher than the predetermined threshold, then the character code is stored as management information (step S107). (Emphasis added.)

A similar distinction not disclosed in Naoi et al. is brought out in step 3) of independent claim 11, which recites "judging whether all character images contained in a specific character image group formed as an assembly of multiple adjoining character images should be *prohibited from being converted into character code data* depending on at least one of the character recognition certainties of said character images contained in the character image group." As pointed out above, Naoi et al. does not judge whether character images should be prohibited from being converted to character code because conversion is carried out without exception.

For at least these reasons, the Naoi et al. patent does not disclose the

combination of each and every feature recited in each of independent claims 1 and 11. As such, claims 1 and 11 are considered allowable.

Claims 10 and 20 respectively depend from independent claims 1 and 11, and are therefore allowable at least for the above reasons. Furthermore, these dependent claims recite combinations that include additional features not disclosed in the Naoi et al. patent.

The Office Action also includes a rejection of claims 9 and 19 under 35 U.S.C. §103, as allegedly being unpatentable over Naoi et al. in view of Seto Toshio (Japanese Patent Publication No. 05-037700). This rejection is respectfully traversed.

Claims 9 and 19 respectfully depend from independent claims 1 and 11. As pointed out above, the Naoi et al. patent does not disclose the claimed judgment unit or step of judging respectively set forth in the independent claims. Nor are these claimed features suggested in Naoi et al. The method of Naoi et al. chooses a particular method for storing management information, which *a/ways* includes storing character code (either with or without the image of the character string based on a level of reliability of the recognition result). (See, column 21, lines 29-32 and lines 48-55, and Figure 26, steps S105, S106 and S107.) It is respectfully submitted that the method of Naoi et al. does not relate to a judgment of whether character images should be *prohibited* from being converted into character code data as claimed.

The Seto Toshio document does not remedy the shortcomings of Naoi et al. Seto Toshio conducts judgment of whether to generate a character code or leave it as image data on each character. Hence, the Seto Toshio document also fails to teach or suggest the judgment unit of claim 1 and the step of judging recited in claim 3.

As both Naoi et al. and Seto Toshio fail to teach the claimed combinations including the judgment unit of claim 1 and step of judging of claim 3, even if one were to consider, for the sake of argument, a combination of the respective teachings from these documents, such hypothetical combination would not have resulted in the combinations recited in the pending independent claims, and hence also in their respective dependent claims.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and indication of the same is earnestly solicited. If the Examiner believes any residual issues remain that are resolvable by way of a telephone call, he is urged to contact the undersigned at the number provided below.

Respectfully submitted,

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